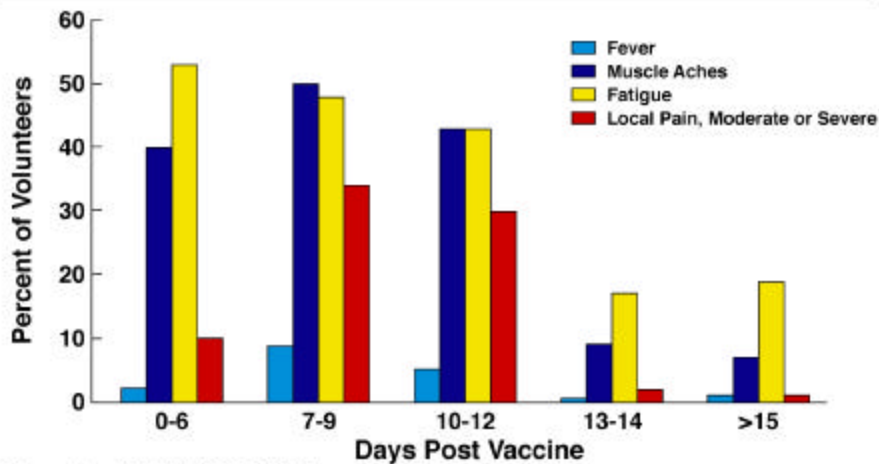


## Rate of Success\* of Initial and Repeated Vaccination with Dryvax

Vaccine	No. of Subjects	Initial Vaccination Successful	Initial or Subsequent Vaccination Successful
Undiluted	106	97.2%	97.2%
1:5 dilution	234	99.1%	100.0%
1:10 dilution	340	97.1%	98.8%

\*Success was defined by vesicle formation 7-9 days after inoculation.  
Reference: Frey S et al. *NEJM* 2002; 346:1265

## Acute Viral Illness Associated with Vaccinia



Reference: Frey S et al. *NEJM* 2002; 346:1265

## **Smallpox Vaccine: Availability by Late 2002**

	<u># of Doses</u>
■ 15.4 million doses of Dryvax diluted 1:5	77 million
■ Contracts for cell culture-derived vaccine	209 million
■ Vaccine from Aventis Pasteur Inc.	> 75 million
Total	> 363 million

## **Formulation of Smallpox Vaccination Policy**

## Complications of Smallpox Vaccination United States, 1968

Vaccination Status	Estimated No. of Vaccinations	No. of Cases						Total
		Postvaccinial Encephalitis	Progressive Vaccinia	Eczema Vaccinatum	Generalized Vaccinia	Accidental Infection	Other	
Primary vaccination	5,594,00	16(4)	5(2)	58	131	142	66	<b>418</b>
Revaccination	8,574,00	0	6(2)	8	10	7	9	<b>40</b>
Contacts	—	0	0	60(1)	2	44	8	<b>114</b>
<b>Total</b>	<b>14,168,000</b>	<b>16(4)</b>	<b>11(4)</b>	<b>126(1)</b>	<b>143</b>	<b>193</b>	<b>83</b>	<b>572</b>

Source: JAMA 1999; 281:2127

A.S. Fauci, NIAID

## Eczema Vaccinatum in a Patient Vaccinated Against Smallpox



Source: NEJM 346:1287, 2002

## Biodefense Research: Therapeutics

- Screening of existing antimicrobial agents for activity against potential agents of bioterrorism
- Development of therapeutic agents against new targets
- Development of therapies against drug-resistant microbes
- Development of broad-spectrum therapies





**Dominant-Negative  
Mutants of a Toxin  
Subunit: An Approach  
to Therapy of Anthrax**

Bret R. Sellman, Michael Mourez, and  
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**Designing a polyvalent  
inhibitor of anthrax  
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Michael Mourez, Ravi S. Kane, Jeremy  
Mogridge, Steve Metallo, Pascal  
Deschatelets, Bret R. Sellman, George  
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